

IN THE CLAIMS:

Please amend the claims to read as follows:

1. (Currently amended) A method for computer aided detection of medical abnormalities in x-ray medical images comprising the steps of:

processing a digital or digitized x-ray medical image of an object to remove distinguishing effects ~~of at least one operating parameter or physical characteristic~~ of an x-ray device used to form said x-ray medical image and the effects of fat content in the object being imaged, thereby forming a processed x-ray medical image; and

processing said processed x-ray medical image with a computer aided detection algorithm that has been optimized with a plurality of x-ray medical images that have been similarly processed with respect to the same operating parameter(s) or physical characteristic(s).

2. (Original) The method of claim 1 wherein the x-ray medical image is a mammogram.

3. (Canceled)

4. (Currently amended) The method of claim 1 wherein the processing removes distinguishing effects of [[all]] both of the following operating parameters of the x-ray device:

x-ray energy;

exposure[[;]]

~~thickness of an object being imaged; and~~

~~non-interesting tissue in the object being imaged.~~

5. (Currently amended) The method of claim 1 wherein the processing removes distinguishing effects of ~~at least one~~ of the following physical characteristics of the x-ray device:

anode material;

source to image distance;

anti-scatter grid geometry;

film characteristics; and

screen-film system.

6. (Canceled)

7. (Currently amended) The method of claim [[6]] 1 wherein an x-ray image of a reference material is formed at the same time as the mammogram and under substantially the

same conditions, said reference material having known x-ray attenuation characteristics representative of different percentages of fat content in the breast, said method further comprising the step of identifying fat content in the mammogram by comparing exposure values in the mammogram with exposure values on the x-ray image of the reference material.

8. (Currently amended) The method of claim 1 further comprising the step of further processing the processed image to form a standard form image representative of an image that would be formed at a standard x-ray energy and exposure.

9. (Original) The method of claim 8 wherein the standard x-ray energy is in the range 25-28 kVp.

10. (Original) The method of claim 8 wherein the standard exposure is in the range 20-200 milli-Ampere-seconds.

11. (Currently amended) A method for processing x-ray medical images comprising the steps of:

processing a digital or digitized x-ray medical image of an object to remove distinguishing effects ~~of at least one operating parameter of physical characteristic~~ of an x-ray device used to form said x-ray medical image and the effects of fat content in the object being imaged, thereby forming a processed x-ray medical image; and

further processing the processed image to form a standard form image representative of an image that would be formed at a standard x-ray energy and exposure.

12. (Original) The method of claim 11 wherein the x-ray medical image is a mammogram.

13. (Canceled)

14. (Currently amended) The method of claim 11 wherein the processing removed distinguishing effects of [[all]] both of the following operating parameters of the x-ray device:

x-ray energy;

exposure[[;]]

~~thickness of an object being imaged; and~~

~~non-interesting tissue in the object being imaged.~~

15. (Currently amended) The method of claim 11 wherein the processing removes distinguishing effects of ~~at least one of~~ the following physical characteristics of the x-ray device:

anode material;

source to image distance;
anti-scatter grid geometry;
film characteristics; and
screen-film system.

16. (Canceled)

17. (Currently amended) The method of claim [[16]] 11 wherein an x-ray image of a reference material is formed at the same time as the mammogram and under substantially the same conditions, said reference material having known x-ray attenuation characteristics representative of different percentages of fat content in the breast, said method further comprising the step of identifying fat content in the mammogram by comparing exposure values in the mammogram with exposure values on the x-ray image of the reference material.

18. (Original) The method of claim 11 wherein the standard x-ray energy is in the range 25-28 kVp.

19. (Original) The method of claim 11 wherein the standard exposure is in the range of 20-200 milli-Ampere-seconds.

20. (Original) The method of claim 11 further comprising the step of:
processing the standard form image with a computer aided detection algorithm that has been optimized with a plurality of x-ray medical images that have been similarly processed with respect to the same operating parameter(s) or physical characteristic(s).

21. (Original) The method of claim 11 further comprising the step of:
processing the processed image with a computer aided detection algorithm that has been optimized with a plurality of x-ray medical images that have been similarly processed with respect to the same operating parameter(s) or physical characteristic(s).

22. (Currently amended) A method for processing mammographic images comprising the steps of:

processing the digital or digitized mammogram of a breast formed by a first x-ray mammography system to remove effects of ~~at least one of the physical characteristics~~ of the first mammography system and its ~~operating parameters~~ fat content in the breast being imaged, thereby forming a first processed image;

converting the first processed image into a standard-form mammography system
x-ray mammogram having a first standard x-ray voltage parameter and a first standard exposure
parameter; and

storing said standard-form x-ray mammogram

whereby visual comparison of x-ray mammograms taken by different x-
ray mammography systems is facilitated by comparing standard-form x-ray mammograms
derived from mammograms taken by the different x-ray mammography systems.

23. (Currently amended) The method of claim 22 wherein the processing removes
distinguishing effects of [[all]] both of the following operating parameters of the mammography
system:

x-ray energy;

exposure[[:]]

~~thickness of an object being imaged; and~~

~~non-interesting tissue in the object being imaged.~~

24. (Canceled)

25. (Currently amended) The method of claim [[24]] 22 wherein an x-ray image of a
reference material is formed at the same time as the mammogram and under substantially the
same conditions, said reference material having known x-ray attenuation characteristics
representative of different percentages of fat content in the breast, said method further
comprising the step of identifying fat content in the mammogram by comparing exposure values
in the mammogram with exposure values on the x-ray image of the reference material.

26. (Currently amended) The method of claim [[8]] 22 wherein the standard x-ray
voltage parameter is in the range 25-28 kVp.

27. (Currently amended) The method of claim [[8]] 22 wherein the standard exposure
is in the range 20-200 milli-Ampere-seconds.

28. (Currently amended) A method for processing mammographic images
comprising the steps of:

forming in a first mammography system a digital or digitized mammogram of a
breast along with images of first and second reference materials having thicknesses that range
from 0 to the thickness of the breast, one reference material having an attenuation constant that is

approximately the same as that of fat and the other having an attenuation constant that is approximately the same as that of glandular tissue;

using exposure information in the images of the first and second reference materials to process the digital or digitized mammogram system to remove substantially all effects related to the physical characteristics of the first mammography system and its operating parameters and the effect of fat content in the breast being imaged, thereby forming a first processed image;

converting the first processed image into a standard-form mammogram having pixel values that would have been obtained by a standard-form mammography system having a first standard x-ray voltage parameter and a first standard exposure parameter; and

storing said standard-form mammogram

whereby visual comparison of mammograms taken by different mammography systems is facilitated by comparing standard-form mammograms derived from mammograms taken by the different mammography systems.

29. (Currently amended) The method of claim 28 wherein the processing removes distinguishing effects of [[all]] both of the following operating parameters of the mammography system:

x-ray energy;

exposure[[;]]

~~thickness of an object being imaged; and~~

~~non-interesting tissue in the object being imaged.~~

30. (Canceled)

31. (Original) The method of claim 28 wherein the standard x-ray voltage parameter is in the range 25-28 kVp.

32. (Original) The method of claim 28 wherein the standard exposure is in the range of 20-200 milli-Ampere-seconds.